December 2, 1914 Vol. V, pp. 73–92

PROCEEDINGS

OF THE

NEW ENGLAND ZOÖLOGICAL CLUB

NOTES ON SOME REPTILES FROM SINAI AND SYRIA.

BY THOMAS BARBOUR.

The following paper is based upon a large and well-preserved collection made by Dr. J. C. Phillips, of the Museum of Comparative Zoölogy, and his assistant, Mr. W. M. Mann. The region which Dr. Phillips covered, is one which has been considerably explored for reptiles and amphibians; nevertheless several interesting novelties appear. The fauna has many interesting features, in that it presents a remarkable mixture of northern European types and of others which have been derived from North Africa, while fewer species seem to have been derived from directly eastward.

I have to thank Dr. Phillips heartily for the opportunity to study this interesting series, and for the aid which he has given me throughout in preparing this paper, and especially for the itinerary of his journey, which helps to make more clear the identity of the place-names occurring on his locality labels.

The drawings illustrating two of the new species are by Mr. E. N. Fischer.

Itinerary.

By J. C. Phillips, M. D.

We left Suez March 23, 1914. The first collecting was done at Springs of Ain Musa, two hours south of Suez. Camped that night at Wady Kardiyeh.

March 24. Marched to Wady Wardan, over desert practically the entire day's ride.

March 25. Over desert plain all day, camping at Wady Gharandal in afternoon, the site of the ancient Elim of the Bible. Here we found no water, except one well six feet below the surface of the Wady. Wyatt mentions taking both teal and pintail ducks at this place during the Ordinance Survey Expedition.

March 26. Camp was pitched at Ras Abou Zanimeh.

March 27. A short walk brought us to the seacoast of the Gulf of Suez. Crossed the wide sandy plain of el Markha. After this the true mountain district of Sinai was reached. Camp pitched this night at Wady Budra, several hundred feet above the sea level.

March 28. We camped in lower part of Wady Feiran, at an elevation of perhaps twelve or fifteen hundred feet.

March 29. We reached the oasis of Feiran, an elevation of about two thousand feet. At Feiran we collected until April 1. Here there is a perennial stream running for about two miles through a rocky canyon, with many palm and nebk trees. Mount Serbal, probably the Mountain of the Law, rises 6759 feet directly south of Wady Feiran.

April 1. We camped only about four or five miles beyond the head springs of Wady Feiran.

April 2. We rode to Wady Selâf, at the foot of the pass of el Hawi.

April 3. There was a small shower of rain in the morning. At the Monastery of Saint Catherine we were told that there had been no marked winter rains on Sinai for three years. Camped at the monastery on the afternoon of April 3.

April 4. The temperature was only 35° Fahrenheit. We rode south, camping near a mountain called Um Shomer, where we hunted ibex on April 5, returning to the monastery on April 6. Everything marked 'Monastery' was collected either in the garden or within ten or fifteen miles of the monastery.

April 7. We started for Akaba, camping at Wady Sa'al.

April 8. Our road continued along Wady Sa'al; we camped under the hill of Hajaj, Wady Kubibe.

April 9. We made only a short distance, to Ain Abottea.

April 10. We went over a high pass, and descended to a palm grove and spring of Hodra. Continued down the valley of Hodra, and camped about half-way down the valley that night.

April 11. In the morning we hunted ibex, and in the afternoon we made a few miles, to the spring of Wady Hodra, where we camped for the night, this point being at about sea level.

April 12. We reached the Gulf of Akaba in about four hours' ride through a narrow canyon, and camped near Nuheibeh, where there are a few palm trees and some water seeping up through the sand.

April 13. We marched along the beach of the Gulf of Akaba, and camped at Abu Suweira, where there were some clumps of rank grass and palm scrub close to the beach.

April 14. We marched along the beach, camping at Wady Kureiyeh near a small island with an old Turkish castle upon it.

April 15. We marched around the head of the Gulf of Akaba, and arrived at the extensive palm groves of Akaba in a few hours.

April 16, 17, 18, 19, 20, 21, we stayed at Akaba, being unable to leave because the mule caravan sent from Jerusalem was delayed.

April 22. We started with a new caravan of horses and mules, and camped at Ain Abu Heran.

April 23. During this day the country became less rugged, the valleys widened out, and the first spots of very rude cultivation were encountered.

April 24. After passing over a very monotonous, stony and sandy desert, we came to the abrupt edge of the Syro-Arabian escarpment. The ascent to the upper desert is very steep and occupies about two hours. The top of the plateau here is about 4600 feet; from it one can look down upon a long stretch of the great desert of the Arabah, the southward continuation of the Dead Sea depression. Rude cultivation begins at this point, all along the edge of the plateau. Camped at the fine spring of Fueileh.

April 25. A very cold morning with a slight frost. Went over a nearly flat country, getting gradually into a stony desert as we approached el Mâân, this point being on the Hejaj railroad.

April 26. We rode to Petra, the first few miles being over stony

desert, and the last part through a fertile and well-watered valley. Camp was pitched near the so-called Pharaoh's Castle, at an elevation of 3090 feet. Here we collected for three days.

April 30. We left Petra, again climbed onto a high plateau, lunching at the splendid oak groves of Wady el Hish. Many of these oaks, which now are scarce in Palestine, were from 17 to 20 feet in circumference, six feet above the ground. Camped at Shobek, which is about five thousand feet elevation. From this point north, all along the west edge of the plateau, the ground is cultivated, trees and vegetation being extremely scarce except in the bottoms of the valleys.

May 1. Extremely cold weather; frost last night. Camped at Ain Gleidat, from which point the south end of the Dead Sea is visible.

May 2. In four hours we reached Tafileh, a large town situated in a deep valley, surrounded by orchards of fig, olive, and pomegranate trees.

May 3. We camped in the deep valley of Wady el Hesa, some two thousand feet below the level of the plateau at this point. Here there are thick jungles of cane, oleander and other shrubs. The climate is almost that of the Dead Sea basin.

May 4. We camped at the town of el Kerak, on the upper part of the Wady Kerak.

May 5. We took part of our caravan and went down to the Dead Sea, camping at the other mouth of the Wady Kerak about two miles from the reed beds on the edge of the Dead Sea.

May 6. We collected at this camp.

May 7. We went back to the main camp at el Kerak. At el Kerak a large number of common lizards were collected for us by boys.

May 8. Marched north over the rolling plain of Moab. Camped on the south side of the Wady el Modschib.

May 9. We crossed Wady el Modschib, a very deep valley at this point, and camped on another one of the Dead Sea streams, Wady Waaleh.

May 10. There was a heavy shower of rain, which is unusual at this season; the weather remained cold and cloudy all day.

We reached the town of Medaba about noon, and camped that night at the spring of Ain Musa, near Mount Nebo, where we collected a number of frogs and geekos.

May 11. We crossed the Jordan valley and camped near Jericho.

May 12. We reached Jerusalem.

After the completion of the trip, Mr. W. M. Mann proceeded from Damascus to Mount Hermon, and collected at the localities mentioned in the following notes. At some of them reptiles and amphibians were taken.

el Katana, May 19. On the plain on the trail from Damascus to Mount Hermon. The camp was by a small stream near the village, and the specimens were taken in the woods along the stream.

Rasheya, May 20, June 1, 2, and 3. Altitude 4101 ft. The last part of the time was spent in a little valley at the base of Hermon, where there was a small grove of trees and some wheat fields.

Ain Hersha. A narrow valley to the west of Hermon. Camped there May 21, and returned and spent May 30 and 31 there.

Hasbeiya, May 22. Camped in a little wady, for which I could find no name, about a mile to the south of the village. Altitude, 2297 ft.

Wady Ain Ata, May 23. A treeless wady at the camp place, which was about three miles to the north of the village of Shiba. This was directly at the base of Hermon.

Summit of Hermon, May 24. I wanted to camp on the slopes, but this was not possible because there was no water. We camped on the summit, a little below Kasr Antar (altitude, 9051 ft.). At this time it was not possible to take the camp to the top of the highest peak on account of snowdrifts. The weather was partly cold and foggy, and partly very windy with rain and some hail at night.

Shiba, May 25. The camp was on a little flat above and to the south of the village.

Bâniyâs, May 27. South of Hermon. Water and trees were abundant. The specimens are from the woods along the stream. Altitude, 1085 ft.

Hibbâriyeh, May 28. Camped in the valley along a stream near Roman ruins. The geckos were in the ruins.

Ain Mimus, May 30. A small spring to the north of Hasbeya.

Kefr Mischkeh, June 3. Camp near the vineyards on the trail between Rasheya and the Litany River.

Aithenit, June 4. Collections made along the Litany River, near the bridge of Aithenit. Poplars and oleanders the only vegetation.

Saghbin, June 5. On the eastern side of the Lebanon and near the Litany. Rocky, with abundant vegetation.

Ammik, June 6. Eastern slope of the Lebanon. Much vegetation.

Bârûk, June 7. Western slope of the Lebanon.

Shtôra, June 8. Eastern Lebanon. The camp was made some distance from the village on the plain. Water and trees abounded.

Zahleh, June 9.

Mr. Mann then proceeded to Beyrout and took steamer there.

The following is an annotated list of the Amphibia and Reptilia collected.

AMPHIBIA.

Hyla arborea savignyi (Auduin).

Taken once at Wady Kerak, in reed beds near a stream, about a foot from the ground. A second specimen from Bâniyâs, Syria, came to the light in Mr. Mann's tent at night.

Bufo viridis (Laurenti).

Three fine brilliantly colored toads of this species were taken at Petra, Arabia.

Bufo regularis Reuss.

Eight adults from Petra. Curiously enough, toads were met with in no other locality, and it is interesting to find, in a collection from this site, specimens of the only two toads from the region, one, *regularis*, quite indistinguishable from a widespread African form, the other, *viridis*, apparently as similar to a widespread European species.

Rana ridibunda Pallas.

Only one frog occurs in the region of Palestine, and a series of this species was preserved from Ain Musa, Mount Nebo, north end of the Dead Sea, from Wady Kerak, east of the Dead Sea, and from Hibbâriyeh, near Mount Hermon.

REPTILIA.

SAURIA.

Stenodactylus guttatus Cuvier.

Collected twice: at Wady Gharbeh, Sinai, one specimen, and at the oasis of Feiran, Sinai, three specimens. So far as I am aware, no other species of this genus has hitherto been recorded from Syria or Sinai.

Stenodactylus elimensis[1] sp. nov.

Type, an adult specimen, no. 9631, M. C. Z., collected at Wady Gharandel, Sinai, by J. C. Phillips, March 25, 1914.

[1] Wady Gharandel was the site of the ancient Elim, the second station where the Israelites encamped the fourth day after crossing the Red Sea. (Exodus, XV, 27).

Stenodactylus guttatus seems to be the only species of this genus which has hitherto been recorded from the region of Palestine and Sinai. It is, however, but distantly related to the present form, which differs in having smaller or more granule-like scales on the head and tail, much longer limbs, and a different arrangement of the scutes about the nostril.[1]

Head large, rounded; snout rounded, one-and-one-third times diameter of the orbit, as long as the distance between the eye and the ear opening; eye very large; ear opening oval, vertical, very small. Body elongate, rather depressed. Limbs very long and slender, the length of the hind limb but little less than the distance from the vent to a line connecting the ear openings; digits elongate, rounded, feebly denticulated laterally; head covered with small, pavement-like, hexagonal scales, each of which has a granulate but not a keeled surface; rostral twice as broad as high, with a mesial cleft through its entire height; nostril pierced in the middle of a slight swelling between three nasals which surround it completely; 12 upper, 13 lower, labials; mental squarish; no chin shields. Body covered with small, flat, pavement-like scales, belly scales smaller and more irregular in shape than the dorsals, and also unkeeled. Tail cylindrical, extremely slender (at the middle point of its length less than one half the diameter of the tail of *guttatus*), covered with extremely minute, granular scales. Color in alcohol, grayish white, with a few brown spots upon the head and scattered, dark brown, wavy markings on the back, which tend to form irregular cross-bars on the dorsal region and a coarse network on the flanks.

In habit *S. climensis* recalls at once the description of *S. wilkinsonii* (Gray) from Egypt, but this species is said to have the snout acutely pointed, the scales subimbricate, and the nostril pierced in a very strong swelling between the first labial and three nasals. The head of this species, which Boulenger has figured (Cat. Liz. Brit. Mus. I, 1885, pl. 3, fig. 3), shows a very different lizard.

Ptyodactylus lobatus (Geoffroy).

Under this general name several distinct geographic races of closely related geckos have been confounded. Thus Boulenger (Cat. Liz. Brit. Mus., I, 1885, p. 110) says, in beginning his description, "general proportions varying considerably." This is certainly true; but I find upon examining the specimens in the

[1] Compare Plate II, figures 2 and 3.

Museum in connection with those which Dr. Phillips secured, that three very distinct and easily distinguished races are found within the range of the species.

P. lobatus lobatus (Geoffroy) was originally described from Egypt, as was *Gecko ascalabotes* of Merrem (Tentamen, 1820, p. 42). This was nothing but a substitute name, as was also the name *Ptyodactylus hasselquistii* of Dumeril and Bibron (Erp. Gen. 3, 1836, p. 378, plate 33, fig. 3). Rüppell's *P. guttatus* also probably is based on the typical form. M. C. Z. no. 1054, consisting of two well-preserved specimens collected in 1855 by H. H. Ward at the Temple of Sakkara, not far from Cairo, Egypt, are topotypes of this race. Besides occurring in Egypt, it was found abundant by Dr. Phillips at Feiran, Sinai, and Akaba and Petra in northern Arabia. The large series from Ain Musa, near the north end of the Dead Sea, is slightly atypical, but may still be considered to represent the Egyptian form.

Lataste gave the name *P. oudrii* (Le Naturaliste, 1880, p. 299) to specimens from Bou Saada in the Algerian Sahara. He sent three cotypes to the Museum of Comparative Zoölogy (no. 4639), and these represent a strongly marked Algerian race, which is distinguished by the small eye and the ear opening, when compared with the typical form. All of our specimens are a deep rich brown in color, almost uniform. The entire series of *P. lobatus lobatus*, numbering some thirty specimens, are ashy gray, not infrequently with light yellowish cross-bars. Thus the Algerian race stands as *Ptyodactylus lobatus oudrii* (Lataste). It may be further distinguished by the shorter and stouter limbs, the legs and arms in the typical race being extremely long and slender.

A third race appears about Mount Hermon, and it is apparently the best differentiated of the three. It may be known as

Ptyodactylus lobatus sancti-montis subsp. nov.

Type, an adult, M. C. Z., no. 9757, collected at Rasheya, base of Mount Hermon, Syria, May 20, 1914, by W. M. Mann.

Similar in habit to *P. l. oudrii*, but stouter still and with even shorter limbs and larger eye and ear opening. Eyes more nearly as in the typical

race. Distinguished at once from *P. l. lobatus* by habit, coloration, and by the larger, coarser granules upon the frontal and nasal regions. Four other specimens from Hibbâriyeh, Syria, also near Mount Hermon, are absolutely identical in every respect. The type of coloration is not approached by a single one in the large series from Egypt and Sinai, and it is entirely unlike those from Algeria. Thus these color characteristics seem to be fixed and permanent, unlike those in many geckos, and to be of excellent diagnostic value. The Hermon specimens are all a rich vandyke brown with irregular transverse series of round black spots upon the neck, body and tail. Between and about these black spots are large numbers of smaller round white spots, which vary considerably in size and shape.

This race is not represented in the collection by specimens from elsewhere than Mount Hermon. The examples from Ain Musa (Dead Sea), however, are much more short-limbed and more heavily built than those from Egypt and Sinai, but nevertheless are colored exactly like the Egyptian specimens, so that they are intermediate between the two races, as one would expect them to be from the locality whence they came. Were it not for this intergrading, we should consider all of these races perfectly distinct species.

The lizards were taken running about on rocks, usually on the shady side of large boulders, or in crevices or small dark caverns. Those from Hibbâriyeh were taken in the Roman ruins, while those from Ain Musa were all taken from one large and very damp cave.

Hemidactylus turcicus (Linné).

Taken once at Petra, and seven times at Akaba. Curiously enough none of these specimens seem referable to *H. sinaitus* Boulenger, which may be entirely confined to the highlands of Mount Sinai itself. Unfortunately, Dr. Phillips did not happen to meet with that little-known species.

Agama sinaita Heyden.

Two specimens of this species, so characteristic of the region, were taken at the Monastery of St. Catherine, on Mount Sinai

itself, while another was procured at sea level near Akaba, Arabia. Not found to be especially abundant anywhere.

Agama pallida Reuss.

Four specimens taken, running about on the open sandy desert near sea level at Wady Gharandel. The species was not common, and the four taken were the only ones seen. Color in life, uniform ochraceous buff.

Two other examples were taken at Fuweila; the ground where these were caught was covered with short bushes, a few inches high, and a great deal of other vegetation. One other was seen; it was not common. The altitude is much greater than at Wady Gharandel. These individuals are darker and more richly colored than those from Gharandel. Mann notes that in its habits and actions this species is very similar to the species of our American genus *Crotaphytus*.

Agama stellio (Linné).

Dr. Phillips and Mr. Mann supply the following note: This lizard was met with throughout the trip. They were always among the rocks in Syria. About Mount Hermon they were very common, generally in open places and along stone walls. Not seen far above the base of Mount Hermon itself.

Some of the adult males from el Kerak, east of the Dead Sea, are beautifully marbled above, with rosy red and blue and green, making a very handsome and brilliant coloration. In the young specimens the enlarged tubercles on the sides are distributed in much more even and regular series than they are in the adults. The localities where specimens were preserved are as follows: Feiran, Sinai; Tafeileh, Palestine; el Kerak, east of the Dead Sea, Palestine.

Uromastix ornatus Rüppell.

One specimen from Wady Gazelle, Sinai. This individual has but eight femoral pores on each thigh, and on one side two and on

the other three preanal pores. The anterior border of the exterior ear opening is distinctly denticulated with five enlarged and bluntly pointed tubercles. Boulenger (Cat. Liz. Brit. Mus., II, 1885, p. 406), with only Egyptian specimens before him, states that the ear opening is without denticulation, and if this is invariably the case, it indicates that the Syrian specimens are at least racially distinct from those in Egypt.

This brilliant lizard was brought to Dr. Phillips' camp by an Arab, who found it on the rocky mountainside of this desert valley. It was the only one seen on the trip.

Lacerta viridis strigata (Gray).

Mann collected a beautiful highly colored adult of this race at Rasheya, Mount Hermon. It is exactly matched in color and squamation by a specimen from Tiflis.

Lacerta danfordii (Günther).

Dr. Phillips preserved a single half-grown specimen of this species from Petra. Finding it here seems to extend very considerably its recorded range. Mr. Mann brought seven examples from Shiba, near Mount Hermon. There is another specimen in the Museum from Adana. The individuals from the three localities suggest that there are several geographic races to be recognized within this species, but, with but one example only from Petra in the South, and one from Adana in the North, it is undesirable to generalize. The Adana example is apparently very like the original types.

Acanthodactylus scutellatus Auduin.

Met with once, when eight specimens were secured at Fuweila in Sinai.

Acanthodactylus boscianus (Daudin).

The following specimens were preserved: twenty from Feiran, two from Wady Gharandel, six from the Monastery of St. Catherine, and one from Fuweila, in Sinai; sixteen from Petra and five from Akaba, in Arabia; and two from Wady Kerak, near the Dead Sea. Other species of this genus, which might be expected to occur in the region traversed, were not found.

Ophiops elegans Ménétrier.

This species is known from a multitude of localities in Syria and Palestine. So far as I know, until the present time it has never been taken in Sinai, although it extends eastward to the Punjaub. Dr. Phillips took two specimens at Fuweila, near Mount Sinai. His collection contains, besides these, three from Jericho, about fifty from Tafileh, Palestine, and about seventy-five from el Kerak, east of the Dead Sea. Besides this, Mann secured it at Rasheya, near Mount Hermon, and there are other specimens in the Museum from Jerusalem and Adana in Asia Minor.

Eremias guttulata (Lichtenstein).

Specimens were preserved from Wady Gharbeh, Sinai, and Petra, Arabia. These do not seem to differ from other specimens in the Museum from Baluchistan, on the east, and from various localities in Algeria, far to the westward.

Eremias rubropunctatus (Lichtenstein).

Six specimens from Wady Gharandel, Sinai, the only station where this species was found. It is confined to lower Egypt and to the peninsula of Sinai.

Eumeces schneideri syriacus (Boettger).

Dr. Phillips met with this beautiful species at but one locality, Petra. Here a large series, of all ages, was secured. They were found in the rough, rocky country; and almost all were taken by Mr. Mann, beneath stones and debris. None were seen prowling about in the open. They were extremely shy and active, when surprised.

This subspecific name is used for the individuals from the Palestine region, which have fewer rows of scales (usually 24 or 25) about their bodies than those from Morocco or Algeria. Boettger founded the race on this character. (Abh. Senck. N. Ges., XIII, 1883, p. 120). Our series is like Boettger's in having similarly few scale rows. The color of the adults, in life, was a beautiful rich bronzy olive, with scattered spots, on the dorsal scales, of the color of burnished copper, and a light lateral stripe of lemon-yellow or salmon-pink on the lower portion of the sides, and below brilliant glistening white, sometimes with a light greenish tinge. The young individuals are very differently colored. The mid-dorsal area, comprising just the two rows of broad scales, is entirely unspotted. On each side of this region there are two narrow dark lines, and then a wide dusky lateral band from the neck region to the groin. This is spotted with white scales. The lower regions of the sides, pure white in the adults, are mottled with dusky spots.

Chalcides ocellatus (Forskal).

This extremely widespread scinc was met with abundantly at two localities: first at Akaba, where most of them were brought in by natives, who found them generally beneath stones, although they were sometimes to be seen in open ground, and then again at Petra, where a number of others were secured. The Museum has a fine lot of recently gathered material of this species from Sicily, Algeria, Nubia, Egypt, Persia, Abyssinia, southern Arabia, and the Anglo-Egyptian Soudan; and a careful examination of all of these has failed to reveal any characteristics whereby the specimens from

the different regions inhabited by this variable species may be distinguished from one another.

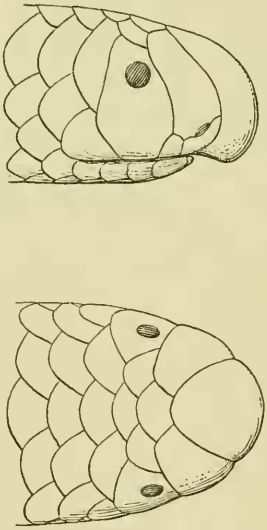
Ablepharus pannonicus Fitzinger.

Two specimens from Wady Gharbeh, Sinai. These examples seem to be exactly the same as others in the Museum, from Buda Pesth, collected by Count Emil Kornis, and from Ofen, Hungary, collected by Dr. Steindachner.

SERPENTES.

Leptotyphlops phillipsi sp. nov.

Type, an adult specimen, no. 9650, M. C. Z., collected at Petra, Arabia, by Dr. J. C. Phillips and Mr. W. M. Mann. Paratypes from the same locality, M. C. Z., nos. 9638–9649.



Leptotyphlops phillipsi sp. nov.

Curiously enough no species of *Leptotyphlops* (*Glauconia* auct.) has, so far as I am aware, hitherto appeared in any of the collections made in Sinai or Palestine. The occurrence of the genus was to have been expected, and the affinities of the species are Egyptian, in common with many others. The present form needs comparison with *L. macrorhynchus* (Jan) only, and differs in several characters from the original figure of this species. (Jan, Icon. Gén., liv. I, pl. 5 & 6, fig. 12).

Snout very prominent, hooked, the preoral portion concave inferiorly; supraocular present, small; rostral not reaching the level of the eyes, (it does in *macrorhynchus*); nasal completely divided; ocular bordering lip between two labials, the first of which is very small. 14 scales around the body. Diameter of the body 86 in total length; length of tail 12.5 times. Colorless.

Boulenger (Cat. Sn. Brit. Mus., I, 1893, p. 62) states that in *macrorhynchus*

the diameter of body is contained 113 times in total length, and the length of the tail ten times. Besides this difference in proportions between *phillipsi* and *macrorhynchus*, Jan's figure shows that in the latter species the second (or postocular) labial is larger, and the postocular above it much larger, more rotund, less oblong in shape. In the figure also the rostral is much more narrow when seen from above and more declivous, less rounded, when seen in profile. The entire typical series before me is remarkably homogenous and shows surprisingly little individual variation.

Typhlops vermicularis Merrem.

Mr. Mann collected five specimens at Rasheya, Mount Hermon, Syria. I have compared these critically with a specimen from the Caucasus, received from the Petrograd Museum through Dr. A. Strauch. I cannot observe any difference between them whatsoever.

Natrix hydrus (Pallas).

Two adults from Wady el Hesa, east of the Dead Sea. In this wady there is a strongly flowing stream of quite deep water. The two specimens were taken in camp about fifty yards from the bank. One specimen was brought in by an Arab, and the other was found beneath the floor-cloth of the tent when camp was broken in the morning. A young specimen was secured at Fuweila in Sinai. So far as I can learn, this is the first record for this species in the Sinaitic peninsula.

Zamenis nummifer (Reuss).

Two fine specimens of this snake were secured, one from El Kerak, on the plateau east of the Dead Sea, and the other from Feiran in Sinai. The Museum had previously received specimens from Jerusalem and from the site of Sidon in Syria.

Zamenis rhodorhachis Jan.

Dr. Phillips met with this snake but once, when a large example was secured at Wady Feiran. There is in the collection of the

Museum (M. C. Z., no. 902) a specimen of this species received from the Essex Institute in Salem, 1861, which had been collected by Captain Charles Millitt in Arabia. It was sent by Professor Agassiz to Jan, and is said to be one of his types of this species. Unfortunately, I have been unable to consult the original description (in De Filippi, Viaggio in Persia, 1865, p. 356), so I can add nothing more regarding the history of this specimen.

Zamenis dahli (Fitzinger).

Taken once at Tafileh, southeast of the Dead Sea. Two specimens have recently been received from Jerusalem.

Zamenis gemonensis asianus Boettger.

Caught by Dr. Phillips at el Kerak, near the Dead Sea. The Museum has a large series of this species from France, Dalmatia, Italy, Sicily, and Syria, including a specimen from Jerusalem, received from the Frankfort Museum, which was studied by Boettger. The Syrian race seems to be well marked and worthy of subspecific designation.

Eirenis coronella (Schlegel).

Boulenger considers this species a *Contia*. I prefer, however, for the present to use this name only for the American species, and *Eirenis* for the allied Old World forms. Dr. Phillips and Mr. Mann procured five snakes which have puzzled me very much; and, as will be seen from the following notes, they are so variable that I believe they combine the characters which were supposed to separate this species from *E. fasciatus*, and make it advisable to consider that name a synonym. I will consider the individuals separately.

The first is an adult from Petra, collected beneath a stone. The color is similar to that in Jan's figure of the synonymous *Homalosoma coronelloides* (Icon. Gen., Liv. XIII, pl. 3, fig. 5). The scale formula follows: Sc. 15; V. 158; A. $\frac{1}{1}$; Subc. 39. A loreal is

present, and the temporals are 1 + 2. The frontal is as long as its distance from the tip of the snout, but little wider than a supraocular, and about four fifths the length of a parietal.

The next two specimens were taken under stones at the Monastery of St. Catherine on Mount Sinai. The scale formula for these is Sc. 15, 15; V. 140, 153; A. 1, 1; Subc. 62, 56. In both of these specimens loreals are present, and temporals are 1 + 1, and the frontals are wider than the supraoculars, shorter than the distance from the tip of the snout, and considerably shorter than a parietal. The two snakes are of almost exactly the same size, and yet the shape of the frontal is rather different in the two specimens, but both fall within the limits which I have mentioned. In coloration both are dusky olive, with many distinct dark cross-bands, and with the usual band on the nape, which does not close below. I might have said that the ground color of the specimen from Petra was rather ochraceous or buffy, while these are grayish.

The fourth and fifth specimens are two young of the same size, both from Petra. One is buffy in color, with cross-bands composed of spots more or less in alignment. The second is sandy gray, with distinct dark olive cross-bands, and with a dusky midventral region. This coloration exactly matches that figured by Jan for *fasciatus* (Icon. Gen., Livr. 15, pl. 5, fig. 2). The scale counts for these two specimens follow: Sc. 15, 15; V. 154, 146; A. 1, 1; Subc. 57, 56. In both these specimens loreals are present, and temporals are 1 + 1, and the frontal is as long or slightly longer than its distance from the tip of the snout, and almost exactly the same length as the parietals.

E. coronella is said to have the scales in from 15 to 19 rows, usually in 17, the ventrals 103 to 148, and the subcaudals 24 to 52, while *E. fasciatus* has the rows 15, the ventrals 158 to 171, and the subcaudals 48 to 62, while an examination of the published accounts of the coloration shows that that described for each species is fairly well represented in this small series of five specimens. At the time of writing the second volume of the Catalogue (1894), Boulenger had no specimens of *fasciatus*, and but six of *coronella*. Five of these had the scales in 15 rows, and one in 19. It will be noticed that all of these specimens have fifteen rows, while the number of ventrals varies from 140 to 158.

Rhynchocalamus melanocephalus (Jan).

"Taken from beneath a stone on a hillside in rather damp ground, among the ruins of Petra, about a hundred feet from the regular camping place. Ground color with a slight salmon tinge. Only one seen." (Mann's notes).

It agrees exactly with Tristram's figure (Fauna and Flora of Palestine, 1884, pl. 16, fig. 1). In life it was pinkish gray above, slightly more pinkish beneath. Top of head and nape deep glossy black, upper lip and rostral shield ivory white. Boulenger in the Catalogue of Snakes (II, p. 246) considers this species an *Oligodon*. In view, however, of its totally and radically different type of coloration and isolated habitat, it seems hardly possible to believe that this location of the species is correct. I may add that a merging of *Holarchus* and *Oligodon* is probably more advisable than including this species in the even thus enlarged genus.

Psammophis schokari (Forskal).

A common sand snake. Specimens were preserved from Feiran, Sinai, and from Petra and Akaba, Arabia.

Echis colorata (Guenther).

This beautiful, delicately tinted sand viper was met with first at sea level near Akaba, Arabia, and again at Wady Kerak on the high, broken, stony plateau east of the Dead Sea. Both specimens were preserved.

Cerastes cornutus (Linné).

Taken from the plateau east of the Dead Sea. Brought in by an Arab at el Kerak. It probably was caught in one of the valleys below the town.

I submit here the following observations, made while looking up the early history of this species. *Coluber vipera* was described

by Linné, in Hasselquist's Iter Palestinum (1762, p. 314). The species was next mentioned by Laurenti in his Synopsis Reptilium (1768, p. 105). He re-named the snake, basing his *Aspis cleopatrae* directly upon Linné's description just cited, and in this new genus *Aspis*, which curiously enough he based on such characters as "Corpus nitidum squammis planis appressis, nec carinatis," he included three additional species. His second species was *Aspis cobella*, based on Seba, Thesaurus, II, pl. 2, fig. 5, a South American species, now included in *Liophis*. The third species was *Aspis variegata*, based on Seba, l. c., II, pl. 2, fig. 8. This species I believe is unidentifiable. The fourth, *Aspis intestinalis*, is based on the same plate of Seba's, fig. 7, and is currently referred to the genus *Doliophis*, which was founded by Girard in 1857 for Cantor's *Elaps flaviceps*, which is a synonym of Boie's *Elaps bivirgatus*. It would thus seem that, since Wagler's name *Cerastes* is available for the first of these species called *Aspis*, the fourth replaces *Doliophis*, the type species being *intestinalis* by elimination.